

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1: (currently amended) A nuclear fission reactor comprising:

- a. a core ~~comprising~~ consisting essentially of a powdered fissile metal hydride;
- b. an atmosphere comprising a hydrogen isotope to which said ~~core~~ powdered fissile metal hydride is exposed;
- c. a non-fissile material separated from said core that absorbs and desorbs said hydrogen isotope based on temperature; and
- d. a means for controlling said non-fissile material temperature; and
- e. ~~a means for extracting energy produced in said core .~~

Claims 2 -7: (canceled)

Claim 8: (currently amended) The nuclear fission reactor of claim 1 wherein said powdered fissile metal hydride comprises fissile uranium hydride.

Claims 9-10: (canceled)

Claim 11: (withdrawn)

Claims 12-17: (canceled)

Claim 18: (original) The nuclear fission reactor of claim 1 wherein said non-fissile material comprises a non-fissile metal hydride.

Claim 19: (original) The nuclear fission reactor of claim 18 wherein said non-fissile material comprises a non-fissile uranium hydride.

Claim 20: (canceled)

Claim 21:(original) The nuclear fission reactor of claim 1 additionally comprising a plurality of trays holding said non-fissile material.

Claim 22-24:(canceled)

Claim 25: (currently amended) The nuclear fission reactor of claim 1 wherein said powdered fissile metal hydride comprises at least one fissile actinide hydride.

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Claim 26: (currently amended) The nuclear fission reactor of claim 25 wherein said at least one powdered fissile actinide hydride is selected from the group consisting of hydrides of uranium and plutonium.

Claim 27: (currently amended) The nuclear fission reactor of claim 25 ~~wherein said core additionally comprises~~ comprising at least one powdered fertile actinide hydride.

Claim 28: (currently amended) The nuclear fission reactor of claim 27 wherein said at least one powdered fertile actinide hydride is selected from the group consisting of hydrides of U^{238} and Th^{232} .

Claim 29: (withdrawn)